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AS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/21/01 024 11/13/00 KO

K 0526.409 (97)

024247
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IM31/0921

EXAMINER

CHEN, K

ART UNIT	PAPER NUMBER
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1765

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DATE MAILED:

09/21/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Advisory Action

Application No.

09/711,324

Applicant(s)

KO ET AL.

Examiner

Kin-Chan Chen

Art Unit

1765

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 10 September 2001 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: 1-38

Claim(s) withdrawn from consideration: _____

8. ☐ The proposed drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☒ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6.
10. ☐ Other: _____

Responses to after-final amendment (reconsideration)

Applicants argue that there is no suggestion to combine the references. This argument is not persuasive. As has been stated above, Bosch teaches a process for selectively etching a structure comprising doped silicon dioxide using a fluorohydrocarbon etchant (e.g., CHF_3), the structure may be removed down to an etch stop comprising undoped silicon dioxide or silicon nitride, and Ding teaches that a substrate having a dielectric layer (e.g., doped and undoped silicon dioxide), may be etched using a fluorohydrocarbon gas such as CHF_3 and $\text{C}_2\text{H}_4\text{F}_2$. Therefore, it would be obvious to one skilled in the art that CHF_3 and $\text{C}_2\text{H}_4\text{F}_2$ are **equivalent**, containing similar etching characteristics, substitution of one for the other for etching dielectric layer would have anticipated to produce an expected result. Hence, one skilled in the art would have found it obvious to substitute $\text{C}_2\text{H}_4\text{F}_2$ of Ding for CHF_3 of Bosch because Ding teaches that they are equivalent for etching dielectric layer and provide high etching rates and good etching selectivity ratios.

In response to applicant's argument that the prior art both Bosch and Ding require the use of additional components, as stated above, it reads on the limitation of "an etchant comprising $\text{C}_2\text{H}_x\text{F}_y$ " in the instant claims.

In response to applicant's argument that the prior art does not teach that an etchant comprising $\text{C}_2\text{H}_x\text{F}_y$, where x is an integer from 3-5, y is an integer from 1 to 3 and $x + y = 6$, may be used to dry etch doped silicon oxide with selectivity over undoped silicon oxide, as stated in the previous office actions, $\text{C}_2\text{H}_4\text{F}_2$ of Ding reads on the limitations of "comprising $\text{C}_2\text{H}_x\text{F}_y$, where x is an integer from 3-5, y is an integer from 1 to 3 and $x + y = 6$ " in the instant claims.

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The discussion of combining Bosch and Ding from above (first argument) is repeated here. The combined prior art teaches that same may be used to dry etch doped silicon oxide with selectivity over undoped silicon oxide.

In light of the comments above, the obviousness rejections are maintained.

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